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ABSTRACTS



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Current Issue: Volume 3, Issue 1 : March 2014

CONTENTS & ABSTRACTS

1. Quantification and distribution of agroforestry systems and practices at global level

Pravesh Kumar, R.P. Singh, Anil Kumar Singh and Vijai Kumar

ABSTRACT: Globally studied remote sensing and geographical information systems data indicated that over 1 billion hectares of agricultural land have more than 10% tree cover, and these areas are home to almost a third of the 1.8 billion people who live on agricultural land. Agroforestry systems and practices vary across the globe such as simple subsistence livestock and pastoral systems to shifting cultivation, home gardens, alley cropping etc. It is estimated that the area currently under agroforestry worldwide is 1,023 m ha. Additionally, substantial extent of areas of unproductive crop, grass, and forest lands as well as degraded lands could be brought under agroforestry. This paper is an attempt to quantification of various agroforestry systems and practices at the global level.

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2. Floral essential oils: Importance and uses for mankind

Babita Singh, Sellam P., Jayoti Majumder and Puja Rai

ABSTRACT: Global turnover of Essential Oil Industry business is estimated to around US\$14 billion. In this turnover India's share is just about 10% though potential is much more. Based on population ratio, the potential is estimated to be 18%. The lack of coordination is responsible for not exploiting the potential to the full extent. There are 400,000 plant species of both aromatic and medicinal plants known to the scientists. Of these about 2000 species come from nearly 60 botanical families of essential oils. Total production of essential oils in the world is over 100,000 tonnes. India's share is estimated to be about 15%. India is one of the few countries in the world having varied agro climatic zones suitable for the cultivation of a host of essential oil bearing plants. Due to increased awareness of health hazards associated with synthetic chemicals coupled with the increased cost of petroleum products, the use of essential oils have been gradually increasing. The consumers are showing increasing preference for natural material over the synthetic. During the last few years with the spurt in the production of essential oils it is emerging as a potential agro based industry in India. With the increase in production of above essential oil, it would be possible for the country to save more valuable foreign exchange in the coming years.

Published in: HortFlora Research Spectrum, 3(1): 7-13 (March 2014)

3. Effect of organic manures on quantitative and qualitative parameters of mulberry production

P. Sujathamma, G. Savithri, N. Vijaya Kumari, Asha Krishna, T. Vijaya, K.V.S.S. Sairam and N. Sreerama Reddy

ABSTRACT: Mulberry is the sole food source of silkworm *Bombyx mori* L. In sericulture the quality of mulberry leaf plays a major role as it influences the quality of silk cocoons. In mulberry, organic carbon and soil moisture have a tremendous influence on leaf yield and quality. In light of the above as well as growing need for maintaining soil fertility and health for sustainable sericulture, the present study was undertaken. In this study six treatments comprising of organic nitrogen, organic phosphorus and organic potassium were applied and the effect of all these inputs on the yield and quality parameters of mulberry were studied in comparison with chemical fertilizers. Studies revealed that T₆ and T₄ have shown positive results compared to control. Application of *Aishwarya* as basal dose followed by the foliar application of the organic nutrients resulted in positive increase in the yield and quality parameters. Significant increase

in average length of shoot, weight of 100 fresh leaves and leaf yield were noticed in all the treatments with organic manures over control involving only chemical fertilizers. In respect of the biochemical composition of mulberry leaf, organic manure treatments showed significantly higher values in respect of moisture content, moisture retaining capacity after 12 hours, total chlorophyll content, protein percentage and carbohydrate percentage over the application of chemical fertilizer.

Published in: HortFlora Research Spectrum, 3(1): 14-20 (March 2014)

4. Effect of different osmotic pretreatments on sensory quality of osmotically dehydrated guava slices

Anitha Pedapati, R.B. Tiwari and A.K. Singh

ABSTRACT: Osmotically dehydrated guava slices were evaluated for their sensory qualities in the present investigation. The various osmotic pretreatments significantly affected the sensory score for colour and it was highest (23.79) in treatment T₈ (70° Brix syrup for 18 hours) followed by T₉ and T₃ while the minimum value (17.48) was obtained for control sample (T₁₀). The overall texture score for dehydrated products from Allahabad Safeda slices (21.17) was significantly superior to Pink Flesh (22.19). The maximum score for texture was recorded in treatment T₃ (50 oBrix syrup for 24 hours). With respect to score for flavour, effect of different osmotic treatments indicated that guava slices made using 70° Brix syrup for 18 hours (T₈) rated significantly superior (31.08) followed by T₄ and T₆. Significantly highest overall sensory score (78.16) was recorded in case of samples obtained with 70° Brix sugar syrup for 18 hours (T₈). Overall acceptability was rated good for smotically dehydrated Allahabad Safeda and Pink Flesh slices produced through treatment T₈ (70° Brix sugar syrup for 18 hours). Osmotically dehydrated slices showed better colour, flavour, texture, and overall acceptability at initial stage than two and four months after storage under ambient conditions. However, products were found acceptable and both varieties Allahabad Safeda and Pink Flesh were found suitable for osmotic dehydration.

Published in: HortFlora Research Spectrum, 3(1): 21-28 (March 2014)

5. Economics of production and marketing of rose flowers in Kannauj district of Uttar Pradesh

Anil Kumar Sachan, Arun Kumar, M.M. Rajput and Arti Katiyar

ABSTRACT: The study was conducted in rose growing pockets of Kannauj district of Uttar Pradesh with an objective of estimating the cost of production and marketing and margins in the trade of loose rose flowers by the farmers. The study indicated that cost of production is the highest in the first year as expenses on field preparation. Gross production cost per hectare is estimated to be Rs. 89550 in first year. The total cost of marketing of rose flowers is estimated to be Rs. 9.60 per kilogram. Labour charges, quantity loss, transportation, commission and packing are important constituents of marketing costs. Total cost including production and marketing was calculated to be Rs. 89550/ha. Producer got only Rs. 12.68/kg at the profit margin i.e. merely 26.66 per cent of the "consumer rupee", whole saler and retailers saved a large part of the price paid by the consumer. Profit year for farmers was also calculated and it was found that farmers start earning profit from the fourth year.

Published in: HortFlora Research Spectrum, 3(1): 29-34 (March 2014)

6. Efficacy of organic acid and chitosan on post harvest shelf life of litchi (*Litchi chinensis* Sonn.) fruits cv. Rose Scented

Deepak Deval, N.K. Mishra, D.S. Mishra and Satyendra Singh Narvariya

ABSTRACT: Pericarp browning and aril decay of litchi fruits shorten post-harvest storage and thus reduce market value. Efficacy of organic acid and chitosan on litchi fruits during storage was investigated during 2011. The experiment consisted of 8 treatments of organic acid and chitosan (control, chitosan 1%, Citric acid 5%, Citric acid 10%, Ascorbic acid 5%, Ascorbic acid 10%, Oxalic acid 5% and Oxalic acid 10%) and stored for 12 days at 2°C with RH 85-90%. Results showed that organic acid and chitosan increased anti-oxidation capacity and inhibited dehydration and microbial attack. Among all treatments, chitosan 1% exhibited a potential for shelf life extension of litchi fruits while oxalic acid 10% effectively controlled the pericarp browning of litchi fruits during postharvest storage.

Published in: HortFlora Research Spectrum, 3(1): 35-39 (March 2014)

7. Effectivity of different fungicides against foliar leaf spot pathogens of poplar under *in-vitro* and *in-vivo* conditions

Ashish Kumar Gupta, Deepak Singh and Anil Kumar Singh

ABSTRACT: The incidence of leaf spots of *Drechslera specifera* and *Curvularia lunata* during April-June was observed to the extent of 72.68 to 88.55 and 11.45 to 27.32 per cent, respectively, whereas, *Alternaria* and *Cercospora* leaf spots were absent. The disease incidence of *Alternaria alternata* was maximum in the month of July-September ranging 19.11 to 29.23 per cent and that of *Cercospora populina* was higher in October-November than July-September being 18.60 to 28.70 per cent. *In vitro* testing of five fungicides namely Dithane M-45, Kavach, Blitox-50, Bayleton and Bavistin against *D. specifera, C. lunata* and *A. alternata* revealed Dithane M-45 to be most effective, whereas, Bayleton and Bavistin were least effective against all these fungi. The *in vivo* testing of fungicides in nursery proved Dithane M-45 at 0.20 per cent concentration best against *D. specifera, C. lunata, A. alternata* and *C. populina* as it totally inhibited the disease under field condition. Next effective fungicides were Kavach and Blitox-50, however, Bayleton and Bavistin were least effective.

Published in: HortFlora Research Spectrum, 3(1): 40-44 (March 2014)

8. Survey on economics of oyster mushroom (*Pleurotus spp.*) cultivation in Uttar Pradesh

Ghanshyam Verma, Arun Kumar, Sheetla Verma and Arti Katiyar

ABSTRACT: An attempt was made to examine the existing level of sample survey on economics of oyster mushroom (*Pleurotus spp.*) cultivation on small, medium and large mushroom farms in Uttar Pradesh. Mushroom is large reproductive structure of edible fungi belonging to either ascomycotina or basidiomycotina classes. Mushroom cultivation increases the additional income of the farmers by utilizing agricultural wastes. It seems to have bright future in the state. Similarily, left over bed of mushroom may be used as proteinous cattle feed and can be converted into quality manure which generates additional income. The production technology is easy to adopt and able to provide income and employment to the farmers specially marginal and small. Marketing is very important in production of any crop. The development of any such crop depends on efficient marketing. On the basis of output: input ratio the large size units was most viable for oyster mushroom production because the ratio of output to the total cost was maximum. Thus, profitability of the mushroom cultivation was more on large size group of sample mushroom growers` With the existing output price, mushroom crop enterprise is an economically viable and employment oriented activity for suburban areas.

Published in: HortFlora Research Spectrum, 3(1): 45-50 (March 2014)

9. Genetic analysis of yield and its contributing traits in brinjal (*Solanum melongena* L.)

Manoj Kumar Singh, Vivek Pandey and Shamsher Singh

ABSTRACT: The experiment was conducted with parent, 45 F1s and 45 F2s population developed through diallel excluding reciprocals along with 10 parents viz., Azad B-1, Type-3, KS-224, KS-235, DVR-8, Azad Kranti, KS-331, PPL, KS-503 and KS-504 in Randomized Block Design with three replications at the Research Farm of the Department of Vegetable Science, C.S. Azad University of Agriculture and Technology, Kalyanpur, Kanpur during kharif 2010. The observations were recorded on 5 randomly selected plants from each row for ten quantitative traits namely, days to flowering, height of plant, number of branches per plant, length of leaf, width of leaf, length of fruit, width of fruit and number of fruits per plant. Genetic component of variance showed significant value for additive component (D) which was significant for width of leaf, length of fruit, width of fruit, number of fruits per plant and weight per fruit on both the generation except days to flowering and plant height based on F1 and number of branches per plant based on F2 only. The dominance components (H) were also highly significant for all the characters under study in both the generations. The degree of dominance (H₁/D)_{0.5} showed over dominance for all the characters in both the generations. The ratio of KD/KR showed presence of more dominant alleles for all the characters based on F1 and F2 generation, while less than unity in F2 generation only for days to flowering and length of fruit. Other characters showed more amount of successive alleles. The ratio of (h2/H2) showed more than two gene group for length of leaf and width of fruit in F1 and F2 generation, respectively. More than three gene groups for length of leaf and weight of brinjal fruit in F2 & F1 & F2 generation, respectively. More than five gene groups for width of leaf in F1, more than six gene groups for width of leaf in F2 generation and other characters showed at least one gene group with some modification for controlling the

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10. Comparative performance of different maturity groups of soybean (*Glycine max* L. Merrill) genotypes under Punjab conditions

Anil K. Dogra, Jagmeet Kaur, B.S. Gill and Jasdeep Kaur

ABSTRACT: Soybean (*Glycine max* L. Merrill) is an important leguminous pulse and vegetable oil seed crops growing in tropical and sub-tropical regions of India. It is a thermo-sensitive crop and its response to yield is governed by

genotype which differing maturity. Fifteen genotypes differing in maturity dates-early, medium and late were selected and sown on first fortnight of June. The genotypes with late maturing date produced higher yield as compared to the early and medium maturing genotypes. The results revealed that the genotypes early (EC 457161), medium (SL 983) and late (SL 958) produced higher numbers of pods per plant, plant height, more 100-seed weight, harvest index and maximum seed yield (2053.67, 2441.91 and 2370.86 kg/ha) than other because of their better genotypic records. Finally, the genotype SL-958 at late maturing date seemed to be more effective in getting higher grain yields.

Published in: HortFlora Research Spectrum, 3(1): 56-60 (March 2014)

11. Impact of agro-climatic diversity on diamondback moth in West Bengal *T.N. Goswami and A.K. Mukhopadhyay*

ABSTRACT: Study was undertaken in quest of impact of agro-climatic condition on the morphometric and biological variations of diamondback moth populations in six distinct agro-climatic regions, viz., Hilly Region, Tarai Region, Bindhya Alluvial Region, Gangetic Alluvial Region and Coastal Region of West Bengal, India. Morphometry of DBM populations from the different agro-climatic regions of West Bengal explicitly unveiled existence of heterogeneity in the insect populations which was maintained through the successive developmental stages of the same generation as well as through the successive generations. Study on various biological parameters of the DBM populations from the above mentioned regions was also undertaken for successive four generations under constant temperature and humidity regime and same food materials. It was recorded that with regard to fecundity and mating duration in all the four generations, populations of Tarai Region, Gangetic Alluvial Region, Bindhya Alluvial Region and Coastal Region were quite congruent to each other whereas populations of the Hilly Region and Lateritic Region were heterogeneous to the formers but close to each other.

HortFlora Research Spectrum, 3(1): 61-64 (March 2014)

12. Influence of some phytohormones based culture medium on *in-vitro* multiplication of gerbera (*Gerbera jamesonii*)

Shyam Ji Mishra, Ramesh Chandra, Laxmi Prasad and R.K.

ABSTRACT: The experiment was conducted during 2009-10 at Plant Tissue Culture Laboratory of Uttar Pradesh Horticulture Department, Lucknow and Bundelkhand University, Brahmanand Mahavidyalaya, Rath, U.P. to study the *in vitro* multiplication of gerbera cultivars (Tamara and Panama) from shoot bud and capitulum bud culture explants using MS medium supplemented with phytohormones i.e. BAP (0.5, 1, 2, 3 mg/l), Kinetin (0.5, 1, 2, 3 mg/l) and IAA (0.5, 1.0 mg/l). MS medium supplemented with BAP 2.0 mg/l + IAA 1.0 mg/l gave the highest culture regeneration, number of multiple shoots, number of leaves per plant, shoot length and took least days to bud break in both-shoot bud and capitulum bud culture taken as explant.

Published in: HortFlora Research Spectrum, 3(1): 65-68 (March 2014)

13. The extent of genetic diversity in different genotypes of potato

Hariom Katiyar, Vijai Kumar, Vandana Umrao, Naveen Chandra and S.K. Verma

ABSTRACT: The maximum genetic divergence for quality characters (3145.78) was observed between cluster-I and III. The highest cluster mean values for growth characters viz. shoot girth, plant height and yield (q/ha) were observed in cluster-II. While for quality characters cluster-I showed maximum cluster mean for protein content, nitrogen content, phosphorus content and specific gravity. Cluster VII showed maximum cluster mean value for specific gravity. The characters viz. plant height, leaf area, tuber weight, number of stolen per hill and number of tuber per hill contributed maximum towards diversity in descending order. There is no parallelism between geographical and genetic divergence. Thus, based on the findings of present investigation it can be concluded that good diversity and variability was present in the genotypes tested.

Published in: HortFlora Research Spectrum, 3(1): 69-72 (March 2014)

14. Rain-induced fruit cracking in sweet cherry (*Prunus avium* L.) cultivars *F.A. Khan, A.H. Rather and Hafiza Ahsan*

ABSTRACT: Survey of cherry orchards in Srinagar and Shopion districts of Kashmir revealed that rain-induced fruit cracking varied with cultivars and Misri recorded highest loss (>50%) of fruit due to cracking followed by Awal Number, Double and Makhmali. The relative susceptibility of different cultivars has also been confirmed in the laboratory by dipping of ripened fruits in water for 48 hours. To test the efficiency of certain chemicals in reducing the rain-induced fruit cracking in sweet cherries ripened fruits were dipped in aqueous solutions of CaCl₂ (0.5 and 1.0%), NAA (10 and 20 ppm) and GA₃ (25 and 50 ppm) for a period of 48 hours at room temperature and cracking of fruits was observed accordingly. Distilled water without any chemical was served as control. Cultivars responded differently to various

chemical treatments. GA3 (50-100 ppm) was found most effective in controlling the rain-induced fruit cracking in Awal Number, while as CaCl2 at 1.0% gave better results with Makhmali, Double and Misri cultivars. Preharvest foliar spray of GA3 (100 ppm) and CaCl2 (1.0%) also confirmed their superiority in controlling the fruit cracking in "Awal number" and other cultivars, respectively as compared to other treatments.

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15. Effect of IBA for inducing rooting in stem cutting of *Duranta golden*

K.K. Singh, T. Choudhary, Prabhat Kumar and J.M.S. Rawat

ABSTRACT: The present investigation was conducted in the mist house located at the HNB Garhwal University, Srinagar, Garhwal, Uttarakhand, India. Softwood cuttings of *Duranta erecta ver. golden* were collected from 2 to 4 year old plants and 15 cm long cuttings with apical portion. The cuttings were treated with 1, 2, 3, 4 and 5g.L-1 IBA solutions by quick dip method. Among all the treatments, highest number of roots per cutting (43.00), length of roots per cutting (9.28 cm), diameter of root per cutting (1.67 mm), percentage of rooted cutting (88.00 %), number of sprouts per cuttings (4.34) and the minimum (20.66) days taken to callus formation was noticed in 4g L-1IBA concentration.

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16. Management of onion thrips (*Thrips tabaci*) through botanicals and bio-pesticides *Sujay Pandey, R.K. Mishra, R.K. Upadhyay and R.P. Gupta*

ABSTRACT: A field experiment was conducted at Regional Research Station, NHRDF, Karnal in two consecutive years during *Rabi*, 2008-09 and 2009-10 seasons on onion variety Agrifound Light Red for the management of onion thrips by using some botanicals and bi o-pesticides. The botanicals and bio-pesticides evaluated were neem crude oil @ 4%, dasparni @ 50ml/lit, *Beauveria bassiana* @10₁₃ spores/ha, spinosad @56g *a.i.*/ha, profenofos @ 1.0ml/lit (check) and unsprayed plot served as control. Pooled data of two years revealed that significantly lowest thrips populations were recorded in check treatment i.e profenofos @ 1.0ml/lit followed by spinosad @ 56 g *a.i.*/ha at 4th day after each spray. Significantly highest gross yield (282 q/ha) was ecorded in profenofos @ 1ml/lit followed by spinosad (262 q/ha).The highest cost: benefit ratio (1:15.79) was also recorded in profenofos followed by *Beauveria bassiana* @10₁₃ spores/ha i.e.1:5.86. Further the study revealed that five sprays of profenofos @ 1.0ml/lit at 10 days interval was found better for the management of onion thrips as well as increasing the yield and botanicals and bio-pesticides alone were less effective on thrips management in onion.

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17. Cultivation of oyster mushroom (*Pleurotus ostreatus*) using spawn run on low cost substrates in Sri Lanka

J.P. Kirthisinghe and H.W.J.P. Amarasekara

ABSTRACT: Pleurotus ostreatus is an edible mushroom, commercially important, predominantly grown variety and widely cultivated in small scale for self-employment in Sri Lanka. Successful mushroom cultivation depends on reliable spawn and good substrate. Most of the growers in mid country buy the reliable spawn from Department of Agriculture (DOA), Peradeniya. Therefore, this experiment was carried out to find out the possibility of using the grower produce spawn run as the initial planting material and to identify the suitable substrate for production of oyster mushroom for the new method. The experiment was conducted for two seasons in the mushroom unit, University Experimental Station, Dodangolla. 5 g of spawn of oyster mushroom for treatments 1 and 3, and 10 g of spawn run for treatments 2 and 4 were used as the planting material. The saw dust substrate for treatments 1 and 2 and the paddy substrate for treatments 3 and 4 were used in polypropylene bags. No significant difference was observed among treatments on spawn runing and pin head formation. A significant difference was observed between the two substrates used in this experiment for the time taken for the first harvest and the total harvest. This study revealed that spawn and spawn run can be use as a planting material and they have no significant impact on duration of spawn runing and pin head formation. In contrast the paddy straw was a better substrate compared to saw dust, which had a great impact on growth and gave the first harvest within 29-30 days. The total harvest was also significantly higher in paddy straw substrate compared to saw dust. Since there was no significant yield difference between the spawn and spawn run treatments the growers will be able to save a rupee from each bag.

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18. Levels of pesticide reduce in cabbage (*Brassica oleracea var. capitata*)

Sangeeta Goomer, Rupa Upadhyay, Aparna Das and Shashi Bala Singh

ABSTRACT: Vegetables are an essential component of nutritionally balanced diet. Among vegetables cabbage is widely grown in India and it suffers from severe infestation due to insect pests like cabbage looper, cabbage worm and

cabbage aphids. To control the pests various pesticides are used, which may be found as remnants on cabbage heads and during processing its disintegrated products remain in the food chain. These pesticide residues, if present in excess, may act as a health hazard to the consumers and may cause chronic diseases. Therefore, an attempt has been made to estimate pesticide residue levels before and after application of food processing practices like washing and cooking in water. The present study indicated considerable amount of reduction in pesticide after washing and cooking in a sample grown under controlled condition. Washing of cabbage samples with water reduced 45.84% of Endosulfan residues but cooking was found to be more effective as it reduced 66.6% of Endosulfan residues.

Published in: HortFlora Research Spectrum, 3(1): 88-90 (March 2014)

19. Analysis of peroxidase isozyme for identification of poplar clones *Manoj Kumar Singh*

ABSTRACT: Peroxidase isozyme analysis was carried out for identification of ten prominent poplar clones namely G48, S7C4,G3, S7C1, S7C8, S7C20, L34, PP5, Fierelo and D121. Leaf extract used for polyacrylamide gel electrophoresis. On the basis of banding pattern all the genotype were grouped into four groups. All the genotypes are distinct in banding pattern and their relative mobility except G3 and L34.

HortFlora Research Spectrum, 3(1): 91-93 (March 2014)

20. Standardization of rapid propagation technique for fig (*Ficus carica* L.) cultivars by budding

H.S. Rattanpal, Gurupkar Singh and Gurteg Singh

ABSTRACT: In the present study eight varieties of fig (*Ficus carica* L) viz., Black Fig, Brown Turkey, Conadria, Deanna, Golden Celeste, King, Panachee and Texas were budded (inverted 'T' method) on seedlings of Brown Turkey in last week of August. Maximum budding success was recorded in variety King and Brown Turkey and the least success was obtained in Black Fig. There was no significant difference between the varieties for number of days taken from budding to sprouting. Besides, no incompatibility was recorded in any variety even one year after budding operation. The union became smoother with time. As fig culture in Punjab is new, this technique will help in the quick spread of newly introduced varieties.

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21. Effect of biofertilizers on morphological characteristics in grafted plants of aonla *A. Kumar, R.B. Ram, M.L. Meena, U. Raj and A.K. Anand*

ABSTRACT: The current experiment on effect of biofertilizers on morphological characters of grafted aonla plants revealed that treatment of biofertilizers with different combinations showed their significant effects. The combination of AMF + *Azospirillum* enhanced higher morphological growth performance than other combinations. The AMF + *Azospirillum* applicated grafted plants produced more leaves and shoot length which could have increase the rate of photosynthesis. This combination also have more roots per plant than other combinations.

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22. Impact of municipal and industrial waste water on corn (*Zea mays L.*) cultivars **Preeti Sarawat and Bharat Veer*

ABSTRACT: The impact of municipal and industrial waste water was studied on seed germination and seedling growth of different corn cultivars (viz. 31Y45,Shakti-1 and Siddhi). The experiment was formulated with four treatments (i.e. 25%, 50%, 75% and 100%) of waste water with three replicates each. Tap water was taken as control. The seed germination and seedling growth were inhibited in treated sets and this inhibitory effect increases with increased in the concentration of treatment. At lower concentration i.e. at 25% of wastewater, however, some promotion in seedling was recorded. Cultivar specific and organ specific differences often exists. Thus, waste water after proper dilution may be used for irrigation of crops.

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23. Genetic variability and heritability in brinjal (*Solanum melongena L.*) *Manoj Kumar Singh, J.R. Yadav and B.M. Singh*

ABSTRACT: High heritability estimates in narrow sense were observed for length of fruit, width of fruit and weight per fruit in F1 generation. Other characters showed moderate heritability in both the generation. High genetic advance in weight per fruit and plant height was observed for single cycle of selection in F1 generation. The probable genetic gain was high for weight per fruit, length of fruit and width of leaf. For fruit yield per plant it was more than 4.5% per cycle of selection. The highest coefficient variability was found for number of branches per plant followed by number of fruits per plant, width of leaf, length of fruit in parents, F1s populations at both genotypic and phenotypic levels. Biparental matting as well as matting among selected plants in early segregating generation would also help in developing population having optimum homozygous and heterozygous balance.

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24. Chromatographic analysis of volatile fragrant compounds from flowers of *Strychnos potatorum* L.

Manika Barar

ABSTRACT: Strychnos potatorum flowers on GC and TLC analysis were found to contain α - Pinene (2.80%), Methyl chavicol (2.25%), d- Cadinene (4.20%), α - Phallendrene (5.30%), Mycrene (3.60%), d-Limonene (4.0%), α - Thujene (8.20%), α -Terpenol (4.60%), Nerol (6.50%), β -Pinene (3.80%), β - Caryophyllene (3.10%), Linelyl A cetate (7.20%), Cineol (6.20%), Borneol (3.60%), Citranellal (15.20%) and unidentified (1.50%).

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